

ABSTRACT OF THE DISCLOSURE

The present invention provides a hydraulically driven multiphase pump system and methods for pumping a fluidstream from the surface of a well. The hydraulically driven multiphase pump system consists of two vertically disposed plungers. The plungers are hydraulically controlled and actuated to work in alternate directions during a cycle using a closed loop hydraulic system. Each cycle is automatically re-indexed to assure volumetric balance in the circuits. An indexing circuit ensures that each plunger reaches its full extended position prior to the other plunger reaching its preset retracted position. A power saving circuit is used to transfer energy from the extending plunger to the retracting plunger. A trim circuit is used to ensure a proper fluid level in the indexing circuit and the power saving circuit. Additionally, a rapid reversal circuit may be employed to increase the rate of the two vertically disposed plungers.